UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/474,607	12/29/1999	FRED OLIVEIRA	E0295/7136	2467

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EXAMINER
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ART UNIT	PAPER NUMBER
2141	

DATE MAILED: 05/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/474,607	OLIVEIRA ET AL.
	Examiner	Art Unit
	Melvin H Pollack	2141

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _23 February 2004_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-22_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1,2,4-9,11-16 and 18-22_ is/are rejected.

7)☒ Claim(s) _3,10 and 17_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _18 March 2003_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☒ Other: _see attached office action._

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed 23 February 2004 have been fully considered but they are not persuasive. The responses are given below. In general, many of the arguments cover ground mentioned in previous office actions.

2.   The examiner agrees that prosecution on this case has been extensive, and sympathizes with the applicant's frustration. However, while the office does strive to expedite cases as quickly as reasonable, the number of office actions holds no bearing to the allowability of this case. Further, the examiner has suggested on record allowable subject matter, and has found his suggestion rejected without cause.

3.   The examiner upholds his previous objection that claims 3, 10, and 17 are allowable if written in independent form.

4.   In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

5.   In response to applicant's argument that Eslambolchi is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order

to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977

F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Eslambolchi is clearly in the field of

the applicant's endeavor and reasonably pertinent to the particular problem with which the

applicant is concerned: the usage and operation of an out-of-band control command system and

network, and it is this network arrangement that remains the important teachings. That said,

Weston-Dawkes clearly teaches the usage of its system on several different network types (col.

6, line 57 – col. 7, line 63) including a "frame relay network" called ATM (col. 7, lines 40-50).

Furthermore, the connection and relationship between switching networks and packet-based

networks are well known to those of ordinary skill in the art, and one of ordinary skill in the art

would know how to combine the two network types, or to study improvements from one network

type in order to improve the other network type.

6.   In response to applicant's argument that there is no suggestion to combine the references,

the examiner recognizes that obviousness can only be established by combining or modifying the

teachings of the prior art to produce the claimed invention where there is some teaching,

suggestion, or motivation to do so found either in the references themselves or in the knowledge

generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5

USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir.

1992). In this case, Eslambolchi teaches a more narrow and detailed version of the Weston-

Dawkes multiple-band network, thus showing that commands are made out of band. One

example of such a command would be to, as applicant suggested, fixing switches (or routers, or

bridges, or other equipment). But the point is not to add Weston-Dawkes to Eslambolchi but

whether a person of ordinary skill in the art would view Eslambolchi and be motivated to modify

Weston-Dawkes using the teachings. In the case of Weston-Dawkes, it would be desirable to use

said polling and repairing methods in a system designed to "define one or more alternate data

paths utilizing different criteria than that utilized by the network protocols controlling the one or

more defined subnetworks (col. 5, lines 10-20)." Further, the important teaching of Eslambolchi

is that is uses out-of-band control commands to perform network activities, and not the precise

commands. Therefore, at the time the invention was made, one of ordinary skill in the art would

have combined the inventions in order to use Eslambolchi's dedicated lines for Weston-Dawkes'

features.

7.   In response to applicant's arguments against the references individually, one cannot show

nonobviousness by attacking references individually where the rejections are based on

combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re

Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

8.   The examiner feels that he needs to clarify the relation between Weston-Dawkes and

Eslambolchi. Weston-Dawkes, as specified in the prior office action, is drawn to multiple

physical pathways. The setup shares many of the aspects of an out-of-band network, but requires

a secondary teaching such as Eslambolchi to fully convert the Weston-Dawkes network to a full

out-of-band network. Grun is then used to teach bidirectionality among the multiple pathways.

The result is an out-of-band network consistent both with the generally understood definition and

with the narrow definition that the applicant has insisted upon and which the examiner has

accepted solely to advance prosecution.

9.   One method of providing the invention drawn in the instant application is to use an out-

of-band network as a primary reference and then add functionality. The examiner has

recognized another obvious method of obtaining the invention; one of ordinary skill in the art can taken a multiple-path network with the functionality, and recognize that the network may be converted into an out-of-band network *without* losing that functionality or destroying the reference. This is not unlike taking a simple web browsing procedure and using a secondary reference to show that the communication may be wireless; such a change is obvious to one of ordinary skill in the art even if the primary reference does not expressly disclose towers or wireless access points.

10.   The other primary issue is the precise definition and arrangement of this network. The examiner has determined that the applicant has a particular subset of the term in mind. However, the applicant has failed to submit either an argument or an amendment further defining and clarifying the system at hand. As a result, the examiner has been forced to interpret the claims more broadly than the applicant would prefer.

11.   Applicant states that examiner does not show that Eslambolchi expressly discloses "identifying target addresses", "bypassing at least one layer in a normal read/write path" or "identifying, from among multiple physical paths, a target physical path for transmission." This is because the examiner has shown that Weston-Dawkes teaches all of these items, and therefore this showing is not required. That said, the examiner would be happy to show that Eslambolchi teaches these limitations (col. 2, lines 50 – col. 3, line 11; col. 3, lines 20-30 and lines 55-65).

12.   The applicant finally claims that Weston-Dawkes does not expressly disclose a communication which specifies a physical path, let alone selecting a different path. The abstract for Weston-Dawkes states "A method and system to… define one or more subnetworks within the at last one network; define one or more *alternate* data paths using *different* criteria than that

utilized by the network protocols *controlling* the one or more subnetworks..." In other words,

the exact purpose for Weston-Dawkes is that, after a communications protocol selects a path

(considered in the art as functionally equivalent to a communications protocol specifying, via

command, a pathway), the next component will then "designate that certain user data travel on

the one or more *alternate* data paths." The examiner notes that not a single piece of previously

mentioned evidence (Fig. 6-9; cols. 11 & 12) has been challenged or acknowledged by the

applicant, nor has the applicant attempted to show how this aspect of the invention differs from

Weston-Dawkes.

13.   In summary, the examiner has considered the applicant's remarks, but they are not

persuasive. This rejection stands, and is made final.

Claim Rejections - 35 USC § 103

14.   Claims 1, 2, 6-9, 13-16, 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Weston-Dawkes (6,487,177) in view of Eslambolchi et al. (6,363,051) and Grun et al.

(6,081,848).

15.   For claim 1, Weston-Dawkes teaches a method (see abstract) of processing an out of

band control command (see below) executed by a host computer (i.e. Fig. 1, 112; client) in a

multi-path system, including the host computer (Fig. 1, 112), a device (Fig. 1, 110, server) and

multiple physical paths coupling the host computer to the device (Note how there are multiple

paths, i.e 112 → 108 → 118 → 132 → 100 vs. 112 → 108 → 102 → 100), the out of band

control command identifying a target address in the device (col. 2-3; col. 7, lines 1-15, IP

addressing and the OSI model) and bypassing at least one layer in a normal read/write path in the

system (col. 8, lines 48-61; where certain communications are moved in a lattice layer placed

between L2 and L3 of the OSI model that represent the normal read/write path of the system),

the out of band control command further identifying, from among the multiple physical paths

(col. 9, lines 35-50), a target physical path for transmission of the out of band control command

between the host computer and the device (col. 12, lines 4-15), the method comprising steps of:

     a.   Selecting a selected physical path for transmitting out of band control command

between the host computer and the device (Fig. 6-9), the selected physical path being

selected from among the multiple physical paths based upon a selection criteria (col. 12,

lines 5-50) that enables the selected physical path to be other than the target physical path

identified by the out of band control command (col. 11, lines 35-45); and

     b.   Transmitting the out of band control command between the host computer and the

device over the selected physical path (Fig. 6, #606).

16.   Weston-Dawkes does not expressly disclose out of band commands, although it does

teach a connection lattice upon which a set of in-band and out of band connections may be

developed. Eslambolchi teaches a method (see abstract) upon which an out of band control

network is used (Fig. 1, #22) in order to perform particular command functions such as polling

and monitoring (col. 1, lines 55-65). At the time the invention was made, one of ordinary skill in

the art would have set up an Eslambolchi network in Weston-Dawkes in order to set up dedicated

lines for certain features (col. 3, lines 1-5).

17.   Weston-Dawkes does not expressly disclose multiple direct paths between each unit.

Grun, which was used to teach many of the limitations of the original claim 1, provides further

detail regarding the fact that a host may have multiple interconnections to the target (Fig. 1). At

the time the invention was made, one of ordinary skill in the art would add Grun's multiple

pathways to each node of Weston-Dawkes in order to bolster Weston-Dawkes' desire to provide

a wider array of possible connections, as shown above.

18.   For claim 2, Weston-Dawkes does not expressly disclose the nature of the device, and

instead leaves the system generic. Grun teaches that the device is a data storage system (Fig. 1,

60-62, databases), wherein the out of band control command requests access to information

stored on the data storage system (col. 3, lines 13-28), and wherein the command transmission

includes a step of transmitting the information between the host computer and the data storage

system over the selected physical path (col. 4, lines 6-20). At the time the invention was made,

one of ordinary skill in the art would have combined the two inventions in order to provide a

possible implementation for Weston-Dawkes, and to more efficiently transfer data (col. 1, lines

10-15).

19.   For claim 6, Weston-Dawkes teaches that the path selection step includes a step of

selecting the selected physical path based upon a selection algorithm that distributes, among the

multiple physical paths a load of operations passing between the host computer and the device

(col. 5, lines 1-20; teaches that paths are selected in view of load balancing).

20.   For claim 7, Weston-Dawkes teaches that the path selection step includes a step of

selecting the selected physical path based upon a state of previously assigned operations queued

for transmission from the host computer to the device over the multiple physical paths (col. 12,

lines 25-50).

21.   Claims 8, 9, 13, and 14 are drawn to a software system that implements the method

drawn in claims 1, 2, 6, and 7. It is well known in the art that a system implementation is

functionally equivalent to the underlying method. Therefore, since claims 1, 2, 6, and 7 are

rejected, claims 8, 9, 13 and 14 are also rejected for the reasons above. A teaching that shows the functional equivalence will be included upon request.

22.   Claims 15, 16, 20, and 21 are drawn to a hardware system that implements the method drawn in claims 1, 2, 6, and 7. It is well known in the art that a system implementation is functionally equivalent to the underlying method. Therefore, since claims 1, 2, 6 and 7 are rejected, claims 15, 16, 20 and 21 are also rejected for the reasons above. A teaching that shows the functional equivalence will be included upon request.

23.   Claim 22 is a system means claim with many of the limitations of claim 20. Since claim 20 is rejected, claim 22 is also rejected for the reasons above.

24.   Claims 4, 5, 11, 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Weston-Dawkes, Eslambolchi, and Grun as applied to claims 1, 2, 6-9, 13-16, 20-22 above, and further in view of Kikinis (6,289,389).

25.   For claim 4, Weston-Dawkes does not expressly disclose that the path selection step includes a step of selecting the target physical path as the selected physical path when the target physical path is operational, and selecting a different one of the multiple physical paths as the selected physical path when the target physical path is non-operational. It would be obvious to one of ordinary skill in the art that Weston-Dawkes can successfully selects a particular path only if a path is operational. It has already been shown that Weston-Dawkes will select a different path for a wide variety of conditions such as to distribute loads more efficiently. Thus, Weston-Dawkes misses only the express teaching that said condition may be when a target physical path is non-operational. Kikinis teaches this limitation (col. 3, lines 10-13; col. 6, lines

19-32). At the time the invention was made, one of ordinary skill in the art would have added

this limitation to make the system more robust, and to improve QoS by ensuring that all packets

arrive.

26.   For claim 5, Weston-Dawkes teaches that the path selection step includes a step of

automatically selecting the different one of the multiple physical paths when the target physical

path is non-operational, without intervention of a system administrator (col. 9, lines 20-47;

Lattice Controllers, which work automatically without user intervention).

27.   Claims 11 and 12 are drawn to a software system that implements the method drawn in

claims 4 and 5. It is well known in the art that a system implementation is functionally

equivalent to the underlying method. Therefore, since claims 4 and 5 are rejected, claims 11 and

12 are also rejected for the reasons above. A teaching that shows the functional equivalence will

be included upon request.

28.   Claims 18 and 19 are drawn to a hardware system that implements the method drawn in

claims 4 and 5. It is well known in the art that a system implementation is functionally

equivalent to the underlying method. Therefore, since claims 4 and 5 are rejected, claims 18 and

19 are also rejected for the reasons above. A teaching that shows the functional equivalence will

be included upon request.

Allowable Subject Matter

29.   Claims 3, 10 and 17 are objected to as being dependent upon a rejected base claim, but

would be allowable if rewritten in independent form including all of the limitations of the base

claim and any intervening claims.

30.   The following is a statement of reasons for the indication of allowable subject matter: the
examiner finds that the combination of limitations in claims 1-3 is a novel invention. Claim 3
adds the limitations of a multi-path system drawn in claims 1 and 2 that further includes a second
computer that is coupled to the data storage system, wherein the data storage system includes a
shared storage region shared by the host computer and the second computer, wherein the target
address specifies the shared storage region, and wherein the transmission step includes a step of
transmitting the information between the host computer and the shared storage region over the
selected physical path. This level of detail is not shown in the analogous art in such a way as to
teach or expressly disclose the combination of limitations. Further, any such combination would
not be obvious. Therefore, claim 3 is allowable in independent form including all limitations of
all parent claims.

31.   Claims 10 and 17 have similar functionality, and are thus allowable for the same reasons.

Conclusion

32.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time
policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE
MONTHS from the mailing date of this action. In the event a first reply is filed within TWO
MONTHS of the mailing date of this final action and the advisory action is not mailed until after
the end of the THREE-MONTH shortened statutory period, then the shortened statutory period
will expire on the date the advisory action is mailed, and any extension fee pursuant to 37
CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Melvin H Pollack whose telephone number is (703) 305-4641.

The examiner can normally be reached on 8:30-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Rupal Dharia can be reached on (703) 305-4003. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MHP
03 May 2004

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER